

of animals is generally toward the setting sun, it would be more reasonable and more in harmony with this general law to base the distribution of animal life on a westward movement across each continent, spreading north and south as food and climatic conditions were found to be favorable to the existence of each class of creatures, rather than upon a haphazard exodus of animals from Asia via Bering Strait bridge.

Undoubtedly a few shells have been introduced into America from other continents, but, after two centuries of close commercial intercourse between America and Europe, we can count all the known introduced land shells on the fingers. I venture to suggest that the distribution of animal life is determined by the laws of attraction and repulsion as much as the revolutions of the earth in its orbit around the sun. There are life centres on each continent around which animals revolve, and from which they radiate and to which they return, with possibly a westward tendency of these life centres. In obedience to this law of attraction birds return each spring to their old nesting places; some fish, like the salmon, return each season to the rivers and creeks in which they were hatched to deposit their spawn, and many other circumstances of a similar kind might be cited in support of such a theory.

I have visited all of the islands off the coast of Southern California, except San Miguel and Anacapa, for the purpose of collecting shells, but before presenting a complete list of the land shells, I will offer descriptions of some forms that seem to be undescribed.

In referring to the Helices I use the general term "Helix," under which genus they have been described, and which, it seems to me, is quite as suggestive, and certainly as useful, as the long cumbersome names that have been recently adopted; leaving to others the choice of half a dozen or more genera and subgenera to which they have been referred from time to time by several distinguished eastern and foreign conchologists.

[*To be concluded.*]

#### A NEW AMNICOLA.

BY BRYANT WALKER.

#### *Amnicola letsoni.*

Shell small, elevated, solid, thick, white; subimperforate, whorls

$4\frac{1}{2}$ , more or less flattened laterally and inclined to be shouldered; smooth; suture deep; spire short, less than one-third of the entire length, apex obtuse; aperture small, ovate, angled above, rounded below, flattened on the parietal margin, which is quite oblique to the axis. Peristome thick, continuous, entirely free from contact with the body-whorl in fully mature specimens.

Alt.  $3\frac{1}{2}$ , diam.  $2\frac{1}{4}$ , length of aperture  $1\frac{1}{2}$  mill.

Alt. 3, diam. 2, length of aperture  $1\frac{1}{2}$  mill.

Habitat: Goat Island, Niagara River, N. Y.

*Amnicola sheldoni* Pils. is the only species with which this can be compared. The present species, however, is to be distinguished by its flattened, shouldered whorls, deeper suture and more acuminate spire. Six mature examples were found which, though differing somewhat in the relative proportions of length and width, are, as a whole, quite uniform. In four of them, the peristome is distinctly separated from the body-whorl; in one, while continuous, it is so close as to be almost adnate, while in the remaining specimen, the parietal margin, although somewhat broken, seems to have been appressed to the body-whorl for a short distance. Associated with these specimens were two other examples quite similar, but much more cylindrical in outline, less solid, and with the aperture less angled posteriorly. Neither is quite mature, judging from the thinness of the lip. In view of the considerable variation in these particulars in other well-known species of the genus, such as *Amnicola lustrica* Pils. and of the few specimens now at hand, it is not deemed advisable at the present time to do more than call attention to the fact. Dr. Pilsbry, to whom some of the specimens were submitted, suggests that, like *Pyrgulopsis mississippiensis* Pils., it is probably an extinct species, and will be found in some quarternary bed along the Niagara or some tributary creek.

The type specimens were collected by Miss E. Jennie Letson, of Buffalo, N. Y., and the species is named in her honor.

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#### EXOTIC MOLLUSKS IN CALIFORNIA.

BY JOSIAH KEEP.

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In a recent pamphlet, Mr. R. E. C. Stearns speaks of twelve exotic species of mollusks that have been found in California. Sev-